



PCT10

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RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/009,919A

DATE: 07/24/2002

TIME: 11:53:40

Input Set : A:\DAVI151SEQLIST.TXT

Output Set: N:\CRF3\07242002\J009919A.raw

4 <110> APPLICANT: Panaccio, Michael
 5 Rosey, Everett Lee
 6 Hasse, Detlef
 7 Ankenbauer, Robert G.
 9 <120> TITLE OF INVENTION: LAWSONIA DERIVED GENE AND RELATED
 10 HEMOLYSIN POLYPEPTIDES, PEPTIDES AND PROTEINS AND THEIR USES
 13 <130> FILE REFERENCE: DAVI151.001APC
 15 <140> CURRENT APPLICATION NUMBER: US 10/009,919A
 C--> 16 <141> CURRENT FILING DATE: 2002-06-14
 18 <150> PRIOR APPLICATION NUMBER: PCT/AU00/00439
 19 <151> PRIOR FILING DATE: 2000-05-11
 21 <150> PRIOR APPLICATION NUMBER: US 60/134,022
 22 <151> PRIOR FILING DATE: 1999-05-13
 24 <160> NUMBER OF SEQ ID NOS: 11
 26 <170> SOFTWARE: FastSEQ for Windows Version 4.0
 28 <210> SEQ ID NO: 1
 29 <211> LENGTH: 251
 30 <212> TYPE: PRT
 31 <213> ORGANISM: Lawsonia intracellularis
 33 <400> SEQUENCE: 1
 34 Met Ala Lys His Lys Val Arg Ala Asp Glu Leu Val Phe Leu Gln Gly
 35 1 5 10 15
 36 Leu Ala Glu Ser Arg Glu Gln Ala Lys Arg Leu Ile Met Ala Gly Lys
 37 20 25 30
 38 Val Thr Leu Thr Asn Asn Ser Thr Thr Ile Pro Leu Arg Leu Glu Lys
 39 35 40 45
 40 Pro Gly His Lys Tyr Pro Leu Glu Ser Ile Cys Ser Leu Ile Gly Val
 41 50 55 60
 42 Glu Arg Phe Val Ser Arg Gly Ala Tyr Lys Leu Leu Thr Ala Leu Asp
 43 65 70 75 80
 44 Phe Phe Lys Ile Asp Val Lys Ser Cys Ile Cys Leu Asp Ala Gly Ala
 45 85 90 95
 46 Ser Thr Gly Gly Phe Thr Asp Cys Leu Leu Gln His Gly Ala Ser Lys
 47 100 105 110
 48 Val Tyr Ala Ile Asp Val Gly Lys Gly Gln Leu His Glu Lys Leu Tyr
 49 115 120 125
 50 Thr Asn Glu Gln Val Ile Asn Ile Glu Gly Val Asn Leu Arg Thr Ala
 51 130 135 140
 52 Ser Lys Asp Leu Ile Pro Glu Glu Val Asp Ile Leu Thr Ile Asp Val
 53 145 150 155 160
 54 Ser Phe Ile Ser Leu Thr Leu Ile Leu Pro Ser Cys Ile Arg Trp Leu
 55 165 170 175
 56 Lys Ala Ser Gly Ile Ile Ala Leu Ile Lys Pro Gln Phe Glu Leu

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Input Set : A:\DAVII51SEQLIST.TXT
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57	180	185	190
58	Tyr Pro Asp Lys Ile Lys Lys Gly Val Val Lys Glu Thr Ser Leu Gln		
59	195	200	205
60	Tyr Glu Ala Val Glu Lys Ile Ile His Phe Cys Gln Ser Glu Leu Gly		
61	210	215	220
62	Leu Ile Phe Ile Gly Val Val Pro Ser Val Ile Lys Gly Pro Lys Gly		
63	225	230	235
64	Asn Gln Glu Tyr Leu Ile Tyr Leu Lys Lys Arg		240
65	245	250	
68	<210> SEQ ID NO: 2		
69	<211> LENGTH: 756		
70	<212> TYPE: DNA		
71	<213> ORGANISM: Lawsonia intracellularis		
73	<220> FEATURE:		
74	<221> NAME/KEY: CDS		
75	<222> LOCATION: (1)...(756)		
77	<400> SEQUENCE: 2		
78	atg gcc aaa cat aaa gta cgt gct gat gaa ctt gtt ttt tta caa ggg	48	
79	Met Ala Lys His Lys Val Arg Ala Asp Glu Leu Val Phe Leu Gln Gly		
80	1 5 10 15		
82	tta gca gaa agt cgt gaa caa gct aaa cga ctt att atg gca ggt aag	96	
83	Leu Ala Glu Ser Arg Glu Gln Ala Lys Arg Leu Ile Met Ala Gly Lys		
84	20 25 30		
86	gtt aca tta act aat aat tct aca act ata cca tta cgt ttg gaa aaa	144	
87	Val Thr Leu Thr Asn Asn Ser Thr Thr Ile Pro Leu Arg Leu Glu Lys		
88	35 40 45		
90	cca gga cat aaa tat cca tta gaa agt atc tgc agt tta ata ggg gta	192	
91	Pro Gly His Lys Tyr Pro Leu Glu Ser Ile Cys Ser Leu Ile Gly Val		
92	50 55 60		
94	gaa cgt ttt gtg agt aga gga gca tat aag cta tta act gct cta gat	240	
95	Glu Arg Phe Val Ser Arg Gly Ala Tyr Lys Leu Leu Thr Ala Leu Asp		
96	65 70 75 80		
98	ttt ttt aaa att gat gta aaa agt tgt att tgt ctt gat gca ggc gca	288	
99	Phe Phe Lys Ile Asp Val Lys Ser Cys Ile Cys Leu Asp Ala Gly Ala		
100	85 90 95		
102	tct act ggt ggg ttt aca gat tgt ctt tta caa cat gga gca tct aaa	336	
103	Ser Thr Gly Gly Phe Thr Asp Cys Leu Leu Gln His Gly Ala Ser Lys		
104	100 105 110		
106	gta tat gcg att gat gta ggc aaa ggt caa tta cat gag aaa ctg tat	384	
107	Val Tyr Ala Ile Asp Val Gly Lys Gly Gln Leu His Glu Lys Leu Tyr		
108	115 120 125		
110	act aat gaa caa gtt ata aat att gag gga gtg aat tta cgt aca gca	432	
111	Thr Asn Glu Gln Val Ile Asn Ile Glu Gly Val Asn Leu Arg Thr Ala		
112	130 135 140		
114	tct aaa gat ctt att cct gaa gaa gta gat att tta act att gat gtt	480	
115	Ser Lys Asp Leu Ile Pro Glu Glu Val Asp Ile Leu Thr Ile Asp Val		
116	145 150 155 160		
118	tct ttt ata tcg ctt act ttg att tta ccg tca tgt ata cgt tgg cta	528	
119	Ser Phe Ile Ser Leu Thr Leu Ile Leu Pro Ser Cys Ile Arg Trp Leu		

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Input Set : A:\DAVII151SEQLIST.TXT
Output Set: N:\CRF3\07242002\J009919A.raw

120	165	170	175	
122 aag gct tcc gga att att att gcc tta ata aag cct caa ttt gaa tta				576
123 Lys Ala Ser Gly Ile Ile Ile Ala Leu Ile Lys Pro Gln Phe Glu Leu				
124 180	185	190		
126 tat cca gat aaa ata aaa aaa ggt gta gta aaa gaa act agc ttg caa				624
127 Tyr Pro Asp Lys Ile Lys Gly Val Val Lys Glu Thr Ser Leu Gln				
128 195	200	205		
130 tat gaa gca gta gaa aaa att att cat ttt tgt caa tca gaa ctt gga				672
131 Tyr Glu Ala Val Glu Lys Ile Ile His Phe Cys Gln Ser Glu Leu Gly				
132 210	215	220		
134 ctt ata ttt att ggt gtt ccg tcg gta ata aaa ggt cca aaa gga				720
135 Leu Ile Phe Ile Gly Val Val Pro Ser Val Ile Lys Gly Pro Lys Gly				
136 225	230	235	240	
138 aat caa gaa tat ctt att tac ttg aaa aaa cgt taa				756
139 Asn Gln Glu Tyr Leu Ile Tyr Leu Lys Lys Arg *				
140 245	250			
143 <210> SEQ ID NO: 3				
144 <211> LENGTH: 15				
145 <212> TYPE: DNA				
146 <213> ORGANISM: Artificial Sequence				
148 <220> FEATURE:				
149 <223> OTHER INFORMATION: Oligonucleotide primer RA168.				
151 <400> SEQUENCE: 3				
152 aaataataag atgag				15
154 <210> SEQ ID NO: 4				
155 <211> LENGTH: 22				
156 <212> TYPE: DNA				
157 <213> ORGANISM: Artificial Sequence				
159 <220> FEATURE:				
160 <223> OTHER INFORMATION: Oligonucleotide primer RA169.				
162 <400> SEQUENCE: 4				
163 atagaataaca aattataata ag				22
165 <210> SEQ ID NO: 5				
166 <211> LENGTH: 240				
167 <212> TYPE: PRT				
168 <213> ORGANISM: Serpulina (Treponema) hyodysenteriae				
170 <400> SEQUENCE: 5				
171 Met Arg Leu Asp Glu Tyr Val His Ser Glu Glu Val Val Gln Asn Ile				
172 1 5 10 15				
173 Lys Tyr Val Ser Arg Ala Gly Glu Gly Tyr Thr Glu Ser Arg Ser Lys				
174 20 25 30				
175 Ala Gln Asp Ile Ile Leu Ala Gly Cys Val Phe Val Asn Gly Lys Leu				
176 35 40 45				
177 Glu Lys Ala Phe Val Glu Phe Gly Ile Ser Val Glu Asn Lys Ile Cys				
178 50 55 60				
179 Leu Asp Ile Gly Val Lys Val Thr Ser Lys Ala His Lys Ile Lys Asp				
180 65 70 75 80				
181 Thr Asp Asn Ile Ala Ser Thr Gly Gly Phe Thr Asp Cys Leu Leu Lys				
182 85 90 95				

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Input Set : A:\DAVII51SEQLIST.TXT
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183 His Gly Ala Lys Lys Val Tyr Ala Leu Asp Val Gly His Asn Gln Leu
 184 100 105 110
 185 Val Tyr Lys Leu Arg Asn Asp Asn Arg Val Glu Leu Asn Asn Leu Glu
 186 115 120 125
 187 Phe Trp Val Thr Leu Ile Lys Pro Gln Phe Val Ser Ile Glu Asp Phe
 188 130 135 140
 189 Asn Ala Lys Asp Ile Asn Lys Glu Met Phe Asn Asp Glu Ile Glu Ala
 190 145 150 155 160
 191 Glu Arg Gly Asp Val Ser Lys Gly Gly Ile Ile Arg Asp Asp Ile Leu
 192 165 170 175
 193 Arg Pro Ser Val Ile Val Ser Asp Val Ser Phe Ile Ser Ile Thr Lys
 194 180 185 190
 195 Ile Ala Pro Ile Ile Phe Lys Glu Lys Ile Leu Asn Asn Ala Ile Ser
 196 195 200 205
 197 Lys Ile Ile Asp Cys Gly Phe Lys Glu Val Asn Arg Thr Ile Ser Pro
 198 210 215 220
 199 Ile Lys Gly Ala Lys Gly Asn Ile Glu Tyr Leu Ala His Phe Ile Ile
 200 225 230 235 240
 203 <210> SEQ ID NO: 6
 204 <211> LENGTH: 268
 205 <212> TYPE: PRT
 206 <213> ORGANISM: Mycobacterium tuberculosis
 208 <400> SEQUENCE: 6
 209 Met Ala Arg Arg Ala Arg Val Asp Ala Glu Leu Val Arg Arg Thr Val
 210 1 5 10 15
 211 Val Thr Asp Ser Glu Arg Ala Trp Val Ser Arg Gly Ala His Gly Leu
 212 20 25 30
 213 Ala Arg Ser Arg Gln Gln Ala Ala Glu Leu Ile Gly Ala Gly Lys Val
 214 35 40 45
 215 Arg Ile Asp Gly Lys Leu Val Gly Ala Leu Glu Ala Phe Ala Ile Ala
 216 50 55 60
 217 Val Ala Gly Arg Arg Cys Leu Asp Ala Gly Leu Pro Ala Val Lys Pro
 218 65 70 75 80
 219 Ala Thr Ala Val Ser Asp Thr Thr Ala Leu Ala Ser Thr Gly Gly Phe
 220 85 90 95
 221 Thr Glu Val Leu Leu Asp Arg Gly Ala Ala His Val Val Ala Ala Asp
 222 100 105 110
 223 Val Gly Tyr Gly Gln Leu Ala Trp Ser Leu Arg Asn Asp Pro Arg Val
 224 115 120 125
 225 Cys Ala Ser Arg Asp Ala Asp Ile Val Pro Leu Val Lys Pro Gln Phe
 226 130 135 140
 227 Val Val Leu Glu Arg Thr Asn Ala Arg Gly Leu Thr Pro Glu Ala Ile
 228 145 150 155 160
 229 Gly Gly Arg Glu Val Gly Lys Gly Gln Val Gly Pro Gly Gly Val Val
 230 165 170 175
 231 His Asp Pro Gln Leu Arg Val Asp Leu Val Val Ala Asp Leu Ser Phe
 232 180 185 190
 233 Ile Ser Leu Ala Thr Val Leu Pro Ala Leu Val Gly Ala Arg Ser Val
 234 195 200 205

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Input Set : A:\DAV1151SEQLIST.TXT
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235 Leu Ala Val Ala Arg Arg Ala Gln Glu Leu Gly Trp His Ser Val Gly
 236 210 215 220
 237 Val Lys Ala Ser Pro Leu Pro Gly Pro Ser Gly Asn Val Glu Tyr Phe
 238 225 230 235 240
 239 Leu Trp Leu Arg Thr Gln Thr Asp Arg Ala Leu Ser Ala Lys Gly Leu
 240 245 250 255
 241 Glu Asp Ala Val His Arg Ala Ile Ser Glu Gly Pro
 242 260 265
 245 <210> SEQ ID NO: 7
 246 <211> LENGTH: 258
 247 <212> TYPE: PRT
 248 <213> ORGANISM: Aquifex aeolicus
 250 <400> SEQUENCE: 7
 251 Met Arg Leu Asp Lys Tyr Leu Thr Asp Lys Glu Val Lys Glu Leu Pro
 252 1 5 10 15
 253 Lys Tyr Val Ser Arg Gly Gly Glu Gly Ile Val Pro Ser Arg Glu Lys
 254 20 25 30
 255 Ala Gln Ala Val Ile Met Ala Gly Gln Val Leu Val Asn Gly Lys Leu
 256 35 40 45
 257 Glu Trp Ala Ile Lys Arg Phe Ser Leu Asp Leu Lys Asp Lys Val Val
 258 50 55 60
 259 Leu Asp Val Gly Lys Val Val Asp Lys Pro Gly Tyr Arg Leu Lys Gly
 260 65 70 75 80
 261 Asn Glu Lys Val Ser Ser Thr Gly Gly Phe Thr Asp Cys Ala Leu Gln
 262 85 90 95
 263 His Gly Ala Lys Lys Val Tyr Ala Val Asp Val Gly Arg Gly Gln Met
 264 100 105 110
 265 Asp Tyr Lys Leu Arg Gln Asp Pro Pro Val Phe Leu Lys Glu Asp Gly
 266 115 120 125
 267 Leu Leu Leu Val Leu Val Lys Pro Gln Phe Val Leu Tyr Glu Glu Thr
 268 130 135 140
 269 Asp Ala Arg Glu Leu Ser Glu Glu His Val Pro Glu Lys Glu Leu Cys
 270 145 150 155 160
 271 Pro Arg Lys Val Lys Gly Val Val Arg Glu Lys Glu His Lys Val
 272 165 170 175
 273 Asp Leu Ile Thr Cys Asp Val Ser Phe Ile Ser Ser Thr Lys Val Leu
 274 180 185 190
 275 Pro Asn Val Phe Lys Arg Glu Ala Leu Gln Lys Val Val Asn Phe Leu
 276 195 200 205
 277 Lys Glu Asn Gly Phe Arg Ile Leu Gly Val Ile Lys Ser Lys Pro Lys
 278 210 215 220
 279 Gly Thr Lys Gly Asn Glu Glu Phe Phe Val Leu Ala Gly Arg Lys Gly
 280 225 230 235 240
 281 Glu Glu Val Asn Leu Ser Glu Ala Ile Glu Lys Ala Leu Glu Glu Val
 282 245 250 255
 283 Val Asp
 287 <210> SEQ ID NO: 8
 288 <211> LENGTH: 262
 289 <212> TYPE: PRT

VERIFICATION SUMMARY

PATENT APPLICATION: US/10/009,919A

DATE: 07/24/2002

TIME: 11:53:41

Input Set : A:\DAVI151SEQLIST.TXT

Output Set: N:\CRF3\07242002\J009919A.raw

L:16 M:271 C: Current Filing Date differs, Replaced Current Filing Date